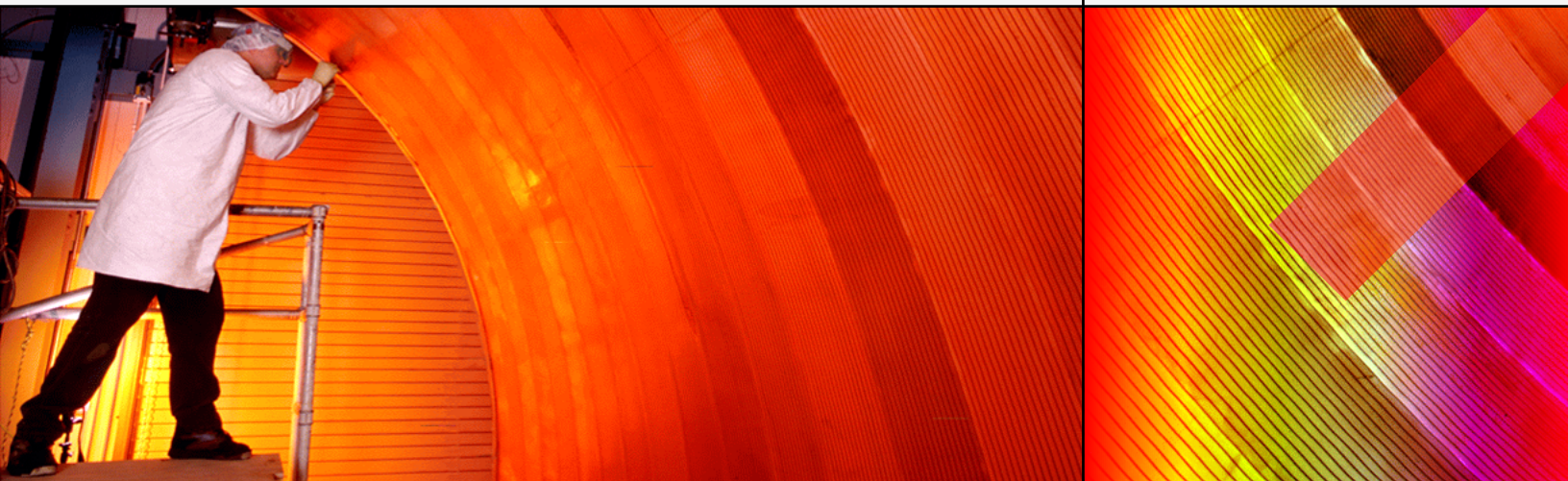


**Porta**  **SIP**<sup>®</sup>

MR-1 1



## **Installation Guide**

## Copyright notice & disclaimers

**Copyright (c) 2000-2006 PortaOne, Inc.**

**All rights reserved.**

PortaSIP Installation Guide, July 2005

Please address your comments and suggestions to: Sales Department,  
PortaOne Inc., Suite 400, 2963 Glen Drive, Coquitlam, BC, V3B 2P7  
Canada.

Changes may be made periodically to the information in this publication. Such changes will be incorporated in new editions of the guide. The software described in this document is furnished under a license agreement, and may be used or copied only in accordance with the terms thereof. It is against the law to copy the software on any other medium, except as specifically provided in the license agreement. The licensee may make one copy of the software for backup purposes. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopied, recorded or otherwise, without the prior written permission of PortaOne Inc.

The software license and limited warranty for the accompanying products are set forth in the information packet supplied with the product, and are incorporated herein by this reference. If you cannot locate the software license, contact your PortaOne representative for a copy.

All product names mentioned in this manual are for identification purposes only, and are either trademarks or registered trademarks of their respective owners.

## Table of contents

	Preface.....	3
<b>1.</b>	<b>Introduction.....</b>	<b>4</b>
	Hardware and software requirements .....	5
<b>2.</b>	<b>Installation Process .....</b>	<b>7</b>
	Step 1: Insert the USB dongle.....	8
	Step 2: Power up, boot order set-up .....	8
	Step 3: Insert the CD-ROM.....	8
	Step 4: Launch the installation process .....	9
	Step 5: Welcome screen.....	10
	Step 6: Disk partitioning - overview.....	11
	Step 7: Disk partitioning - choose disk.....	11
	Step 8: Disk partitioning, slice layout .....	12
	Step 9: STUN feature and RADIUS configuration – parameters.....	12
	Step 10: Network configuration .....	13
	Step 12: Time zone configuration .....	14
	Step 13: Setting up root password and user account .....	15
	Step 14: Start installation.....	16
	Step 15: Installing required applications .....	16
	Step 16: Prepare to reboot .....	18
	Step 17: Check that the system is able to reboot to a normal state.....	19
	Step 18: Prepare system for transportation (optional) .....	19

## Preface

This document provides a general overview of the PortaSIP installation process.

### Where to get the latest version of this guide

The hard copy of this guide is updated at major releases only, and does not always contain the latest material on enhancements occurring in-between minor releases. The online copy of this guide is always up-to-date, integrating the latest changes to the product. You can access the latest copy of this guide at: [www.portaone.com/resources/documentation/](http://www.portaone.com/resources/documentation/)

## Conventions

This publication uses the following conventions:

- Commands and keywords are given in **boldface**
- Terminal sessions, console screens, or system file names are displayed in fixed width font



**Caution** indicates that the described action might result in program malfunction or data loss.

**NOTE:** Notes contain helpful suggestions about or references to materials not contained in this manual.



**Timesaver** means that you can save time by performing the action described in the paragraph.



**Tips** provide information that might help you solve a problem.

# 1. Introduction

PortaSIP runs on most modern UNIX operating systems (FreeBSD, Linux, Sun Solaris, etc.), assuming these are equipped with basic things such as an ANSI C compiler. However, it might be difficult for an inexperienced system administrator to install and configure the operating system in such a way as to meet all of the requirements and provide the best performance. Installing all the prerequisite software (libraries, Perl modules, SIP proxy server, B2BUA, RTP proxy, etc.) could also be a time-consuming task.

The PortaSIP JumpStart installation CD provides a quick and seamless way to perform a complete server installation from scratch, in less than 15 minutes! It contains the installation media for FreeBSD 5.4, with all the necessary packages, plus PortaSIP itself.

The installation wizard uses a text-mode GUI. Use arrow keys to change your selection, “**Tab**” to move between fields, and “**Enter**” to confirm your choice.

## Hardware and software requirements

### Recommended configuration:

- Pentium 4 CPU 2.4 GHz
- Motherboard with 533MHz system bus support
- 512 MB of RAM

Make sure that your servers have been installed and equipped with all the required hardware, especially:

- Network card
- ATAPI or SCSI CD-ROM drive
- Video adapter/monitor/keyboard (required only during the installation process)
- At least one USB port
- At least one disk drive

Please check that other hardware installed in your server (such as network adapter, RAID controller, etc.) is supported by FreeBSD. You can check this on the FreeBSD website: <http://www.freebsd.org>.

During installation you will be prompted for network configuration parameters. Please determine these before installation, consulting your network administrator if necessary. It is possible that you will have to

perform the installation before the network is available (in your office, for example, while the servers will be located in a server hosting center), but you will need to enter the correct data anyway. Please have the following ready:

- IP addresses of the master and slave PortaBilling100 servers
- Subnet mask and address of the default gateway
- Address of your DNS server

If you have a hardware RAID controller available in your system, configure the RAID array. The recommended configurations (depending on the amount of hard drives in the system) are as follows:

- 2 disks – RAID (mirroring)
- 3 disks – RAID 1 (mirroring) on the first two disks, third one left as a hot spare

## 2. Installation Process

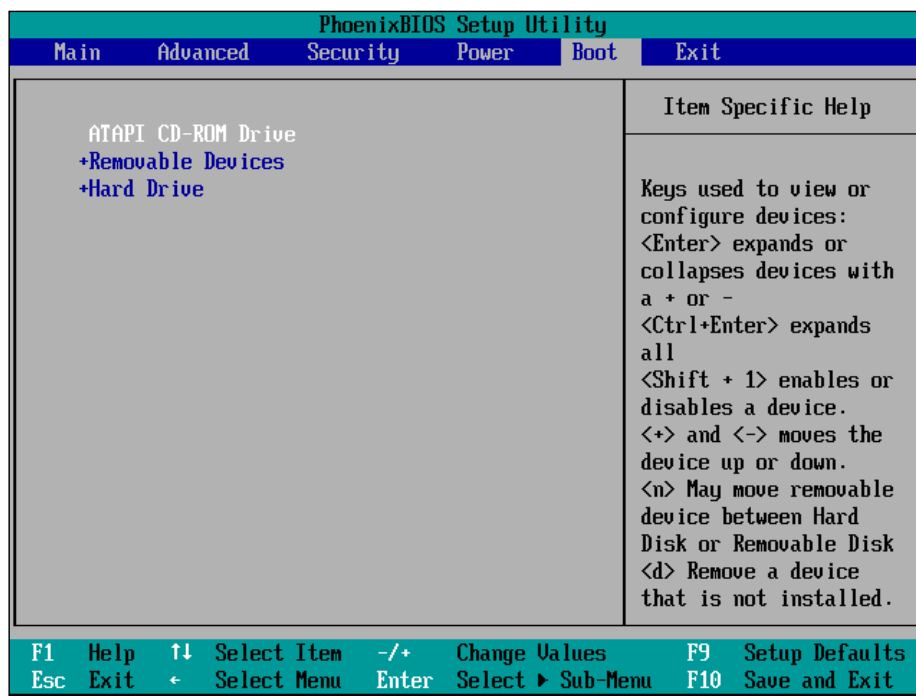


## Step 1: Insert the USB dongle

Before you start the installation, insert the provided USB dongle into one of the available USB ports on your master server. It must stay in place the entire time in order to ensure normal system operation.

## Step 2: Power up, boot order set-up

Power up the computer which you plan to use as a server. Enter the BIOS set-up and make sure that the CD-ROM drive is first on the list of boot devices. If you are installing a dual-server configuration, start your installation with the master server.



**Note:** This image is only an example. The BIOS on your system might look different.

Save your changes and exit.


## Step 3: Insert the CD-ROM

While rebooting the system, insert the PortaSIP installation CD into the CD-ROM drive. If you do not insert it soon enough and get a “no operation system” error (or a previously installed operating system starts

its boot-up process), press the **Reset** button and make sure that you are now booting from the CD.

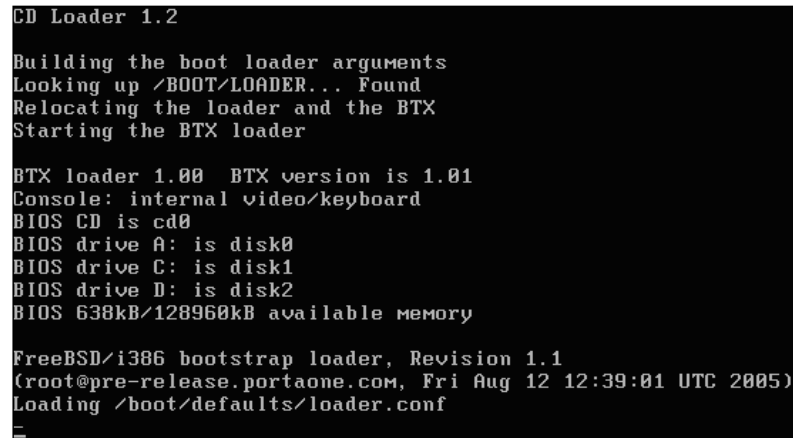
## Step 4: Launch the installation process

First, it asks for your clarification to boot from the CD



```
Press any key to boot from CD.._
```

You will know that JumpStart installation has begun if you see a screen similar to the following one:



```
CD Loader 1.2
Building the boot loader arguments
Looking up /BOOT/LOADER... Found
Relocating the loader and the BTX
Starting the BTX loader

BTX loader 1.00  BTX version is 1.01
Console: internal video/keyboard
BIOS CD is cd0
BIOS drive A: is disk0
BIOS drive C: is disk1
BIOS drive D: is disk2
BIOS 638kB/128960kB available memory

FreeBSD/i386 bootstrap loader, Revision 1.1
(root@pre-release.portaone.com, Fri Aug 12 12:39:01 UTC 2005)
Loading /boot/defaults/loader.conf
=
```

Now, before proceeding any further you will see the following screen.

```

Welcome to PortaOne installation program!

1. Proceed with PortaSIP Installation
2. Disable APIC
3. Disable ACPI
4. Escape to the command line prompt (for advanced users)
5. Reboot

Press 1 or Enter to proceed with installation or [Space] to pause timer 1 _
```

If you select first choice it will start the installation for many hardware configurations. But in some cases with the choice 1, it will give you a device mounting error due to some different hardware systems. In this case start the installation again and when you see this screen select the option 2, 3 or both to enable/disable the APIC/ACPI features.

For example if you are installing in a computer with a motherboard ASUS P4VP-MX, you have to disable the APIC. In this case at the above screen select 2. Then it will show you the disabled features and asks to press 1 or enter to proceed.

```

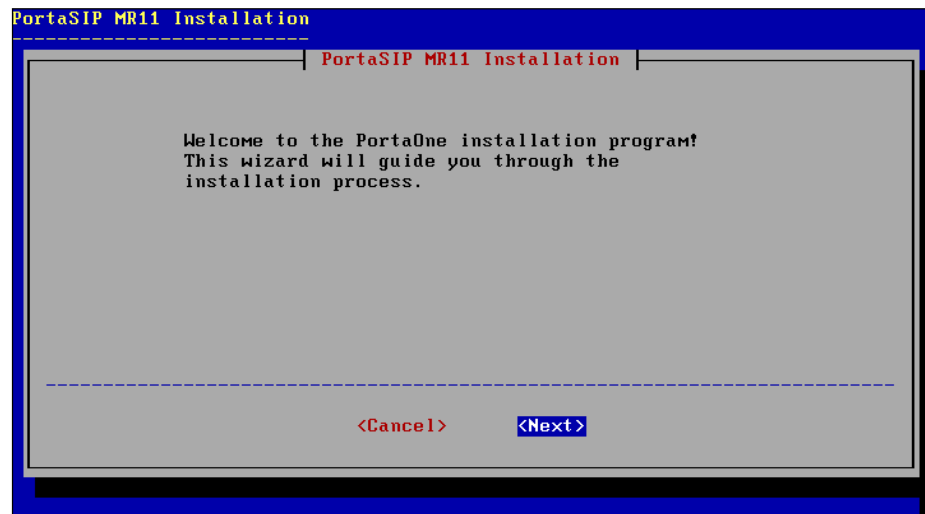
Welcome to PortaOne installation program!

1. Proceed with PortaSIP Installation
2. Enable APIC
3. Disable ACPI
4. Escape to the command line prompt (for advanced users)
5. Reboot

Press 1 or Enter to proceed with installation
APIC disabled
```

## Step 5: Welcome screen

After this, the installation process begins. First you will see the PortaBilling welcome screen:



Press **Enter** to proceed to disk partitioning.

## Step 6: Disk partitioning - overview

Now you will have to allocate the hard drive partitions where FreeBSD and PortaSIP are to be installed. If you have only one hard drive in your system, or your available disks are configured as a single volume array, then the next step will be skipped automatically, and you will proceed to Step 8.

## Step 7: Disk partitioning - choose disk

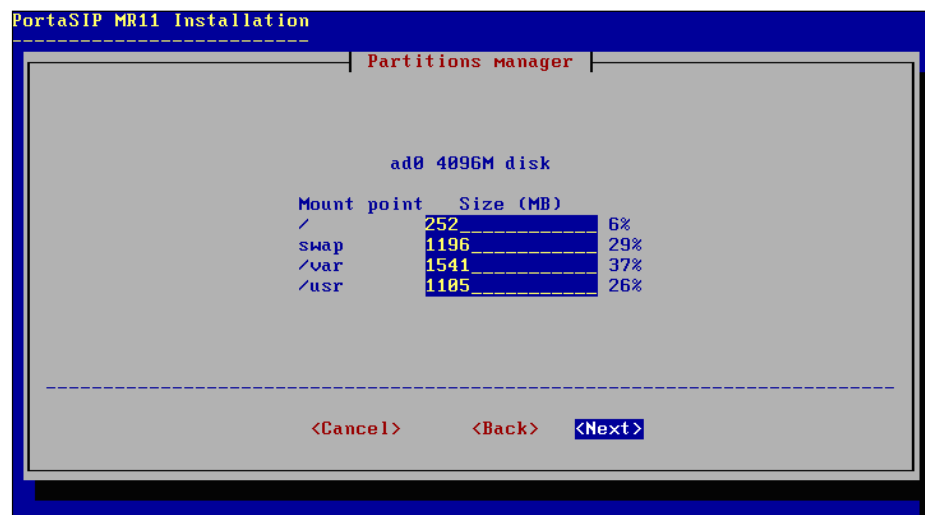
If you have more than one disk in your system, you will have to choose the disk on which you would like to create the FreeBSD partitions. If in doubt, choose the first disk on the list.

**Note:** Installation is always performed on a single disk. If you want to utilize several drives (e.g. install DB on a separate disk), this can be done after the installation.



## Step 8: Disk partitioning, slice layout

You will be prompted to enter slice sizes to hold different file systems; or choose the default ones.

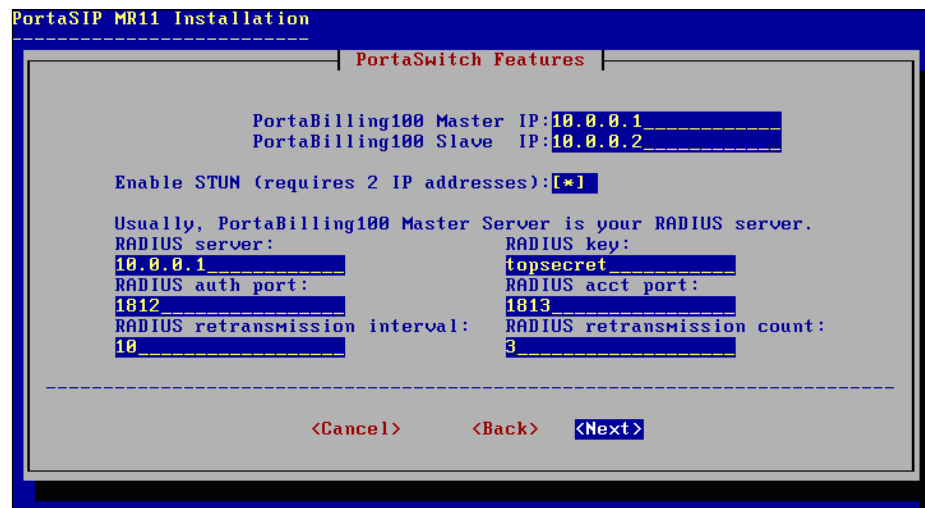


## Step 9: STUN feature and RADIUS configuration – parameters

If you set the stun feature you should have to IP addresses ready for network configuration. You can set the check box for STUN feature using space bar.

Parameter	Description
<b>RADIUS server</b>	IP address of the PB100 master host
<b>RADIUS key</b>	Authentication key for all radius interactions; select a password and make note of it, as you will need to enter it later when adding the PortaSIP node to your PB100 system
<b>RADIUS auth port</b>	Number of UDP ports at which your PB100 accepts authorization requests
<b>RADIUS acct port</b>	UDP port where RADIUS server listens for accounting requests
<b>RADIUS retransmission interval</b>	Number of seconds to wait for reply before retransmitting a RADIUS request
<b>RADIUS retransmission count</b>	Maximum number of retransmissions

Note: Only RADIUS server and RADIUS key are mandatory parameters. You can simply retain the default values for the last four parameters.



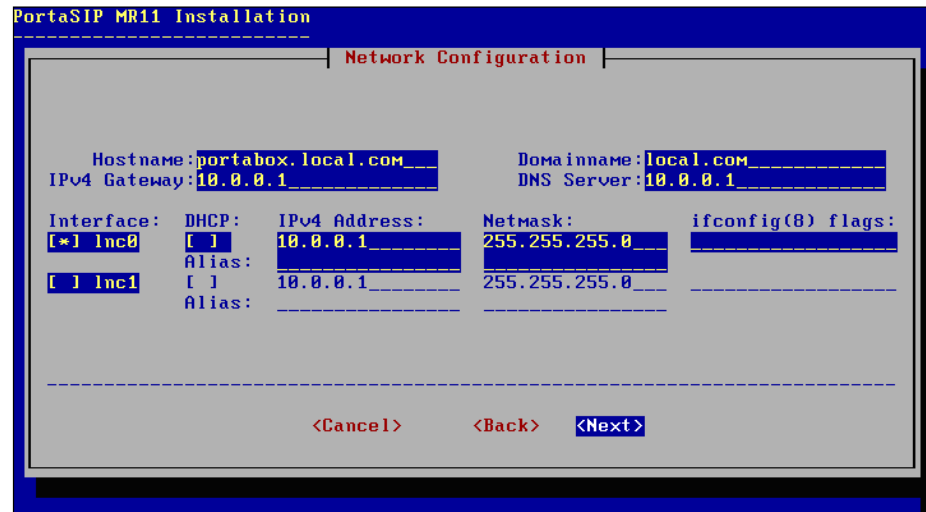
The screenshot shows the 'PortaSIP MR11 Installation' window with a 'PortaSwitch Features' tab. It displays configuration fields for 'PortaBilling100 Master' (IP: 10.0.0.1) and 'PortaBilling100 Slave' (IP: 10.0.0.2). Below this, there's a section for 'Enable STUN (requires 2 IP addresses):[\*]'. A note states: 'Usually, PortaBilling100 Master Server is your RADIUS server.' The configuration fields are as follows:

RADIUS server:	10.0.0.1	RADIUS key:	topsecret
RADIUS auth port:	1812	RADIUS acct port:	1813
RADIUS retransmission interval:	10	RADIUS retransmission count:	3

At the bottom, there are navigation buttons: '<Cancel>', '<Back>', and '<Next>'.

## Step 10: Network configuration

Fill in the desired fields for network configuration in this menu.



PortaSIP MR11 Installation

-----

Network Configuration

-----

Hostname: portabox.local.com Domainname: local.com  
IPv4 Gateway: 10.0.0.1 DNS Server: 10.0.0.1

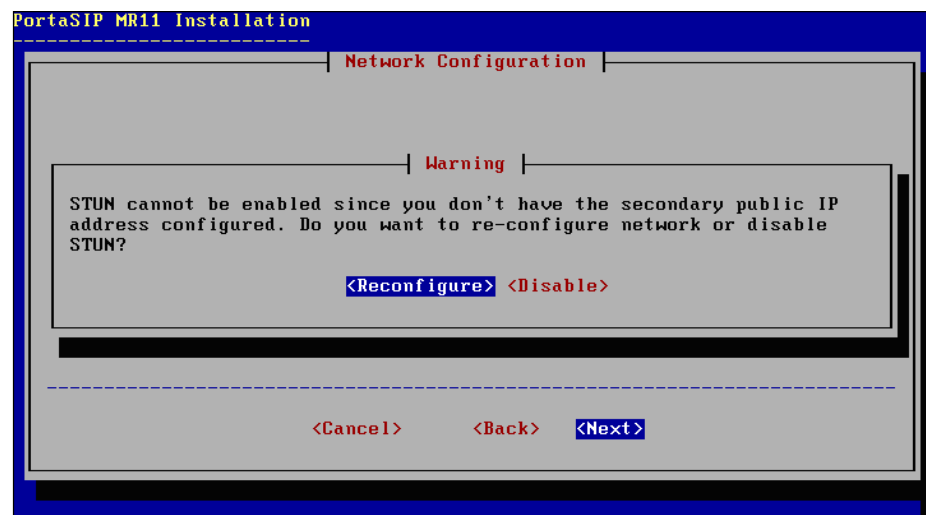
Interface:	DHCP:	IPv4 Address:	Netmask:	ifconfig(8) flags:
[*] lnc0	[ ]	10.0.0.1	255.255.255.0	
	Alias:			
[ ] lnc1	[ ]	10.0.0.1	255.255.255.0	
	Alias:			

-----

<Cancel> <Back> <Next>

Use the space bar to set the check box for Interfaces. Use the Tab key to proceed to the next field. If you have multiple interfaces, set at least one of the interfaces in which your machine connects to the internet. If you do not use DHCP, please unset this box. You can leave the alias and ifconfig(8) flags empty.

However, if you have set the STUN feature in the previous screen you must fill in the alias IP field for the selected interface or have a secondary interface set and fill the IPv4 address for it. If you do not do so, you will be prompted to reconfigure the network as shown below:



PortaSIP MR11 Installation

-----

Network Configuration

-----

Warning

STUN cannot be enabled since you don't have the secondary public IP address configured. Do you want to re-configure network or disable STUN?

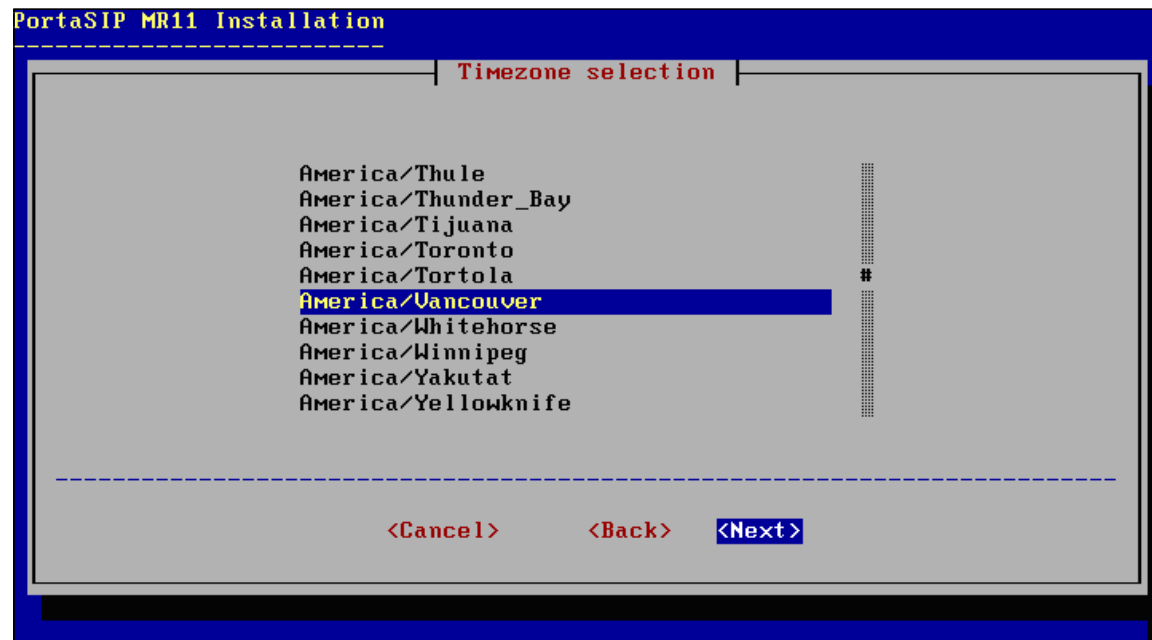
<Reconfigure> <Disable>

-----

<Cancel> <Back> <Next>

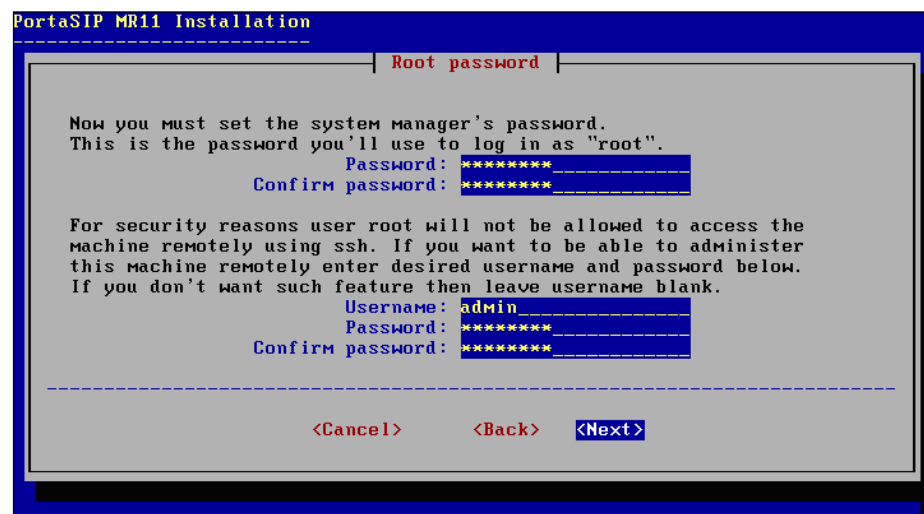
## Step 12: Time zone configuration

Proper adjustment of your clock and time zone is essential to achieving accurate billing.



## Step 13: Setting up root password and user account

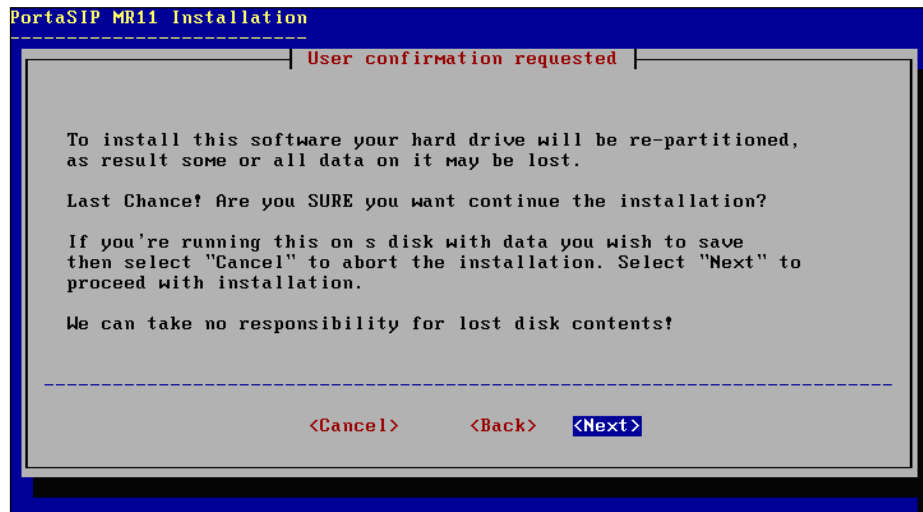
Choosing the super user password is very important. You will need this to perform system administration or system recovery. Choose a password which is difficult to guess or crack. Add another user account especially for remote administration.





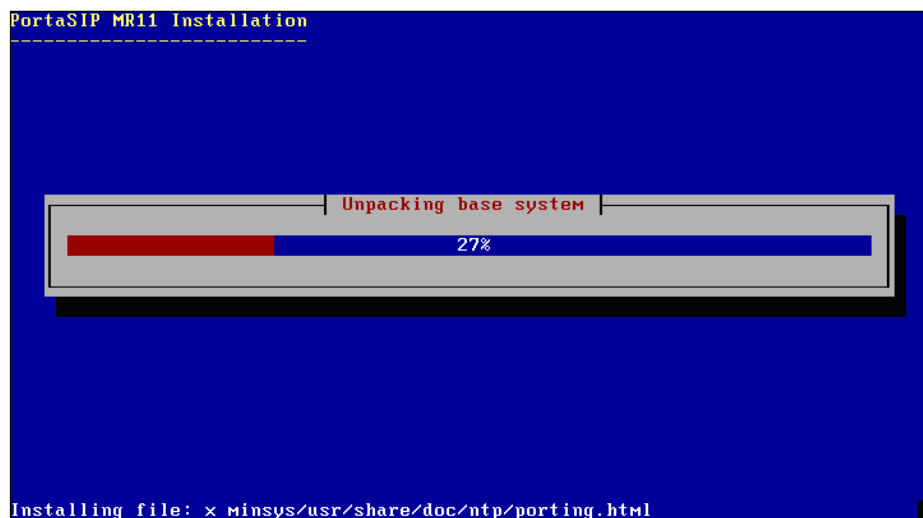
## Step 14: Start installation

Your confirmation is required before the disk layout is changed and the partitions are reformatted. Press **Enter** to proceed.



## Step 15: Installing required applications

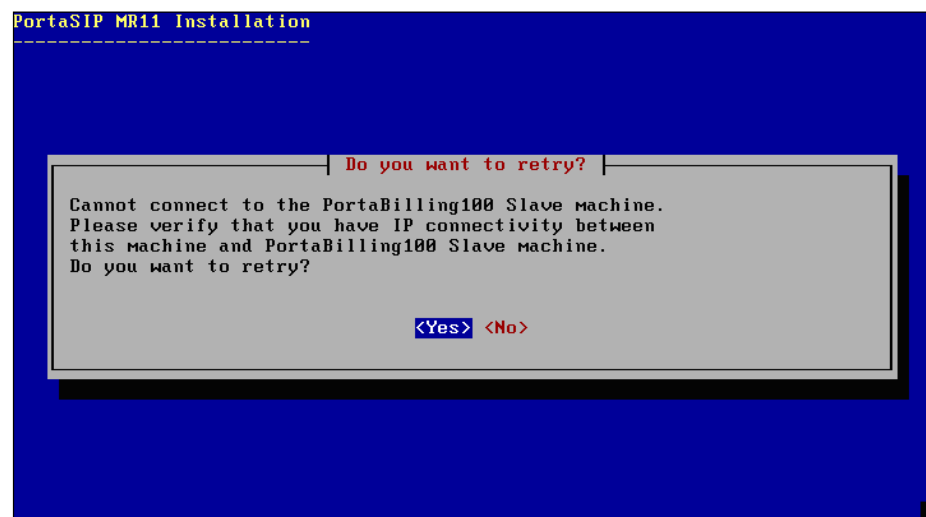
When installation starts, you will see a screen similar to the one below. At this step, the installation program will install all the required third-party applications, such as MySQL and PortaSIP software. This step may take 5-10 minutes.



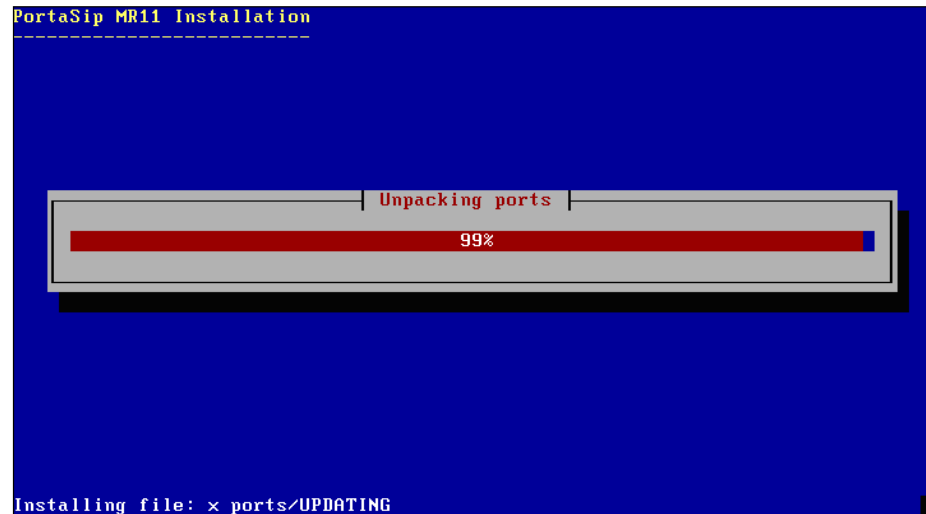
During installation you will be asked to enable SIP features on your PortaBilling web interface.



If you select **Yes** on the screen above, and you do not have IP connectivity to the PortaBilling slave machine, you will be prompted by the following screen. Or, choose **No** to proceed if you do not have such connectivity.

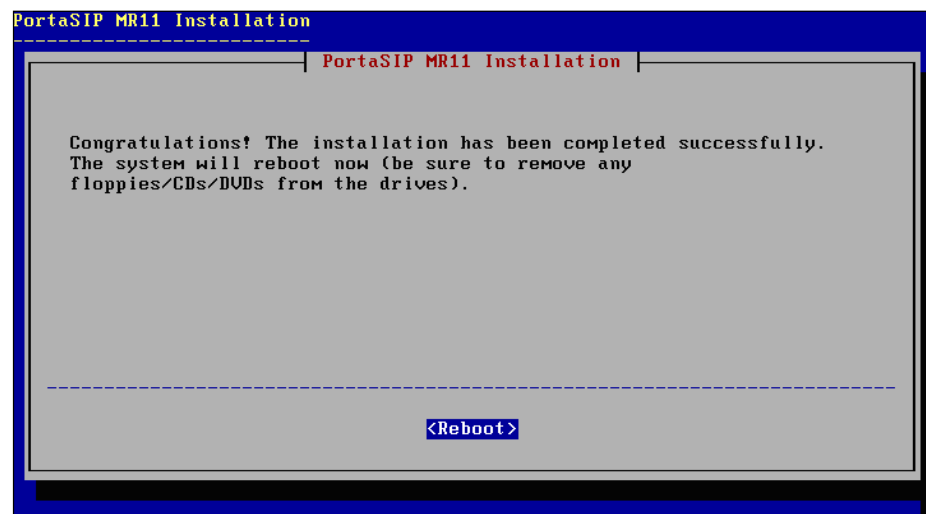


The installation continues, and you will see its progress.



## Step 16: Prepare to reboot

Installation is now finished. Press **Enter** when you reach the following screen. After the system begins its reboot process, remove the installation CD from the CD-ROM. Do not forget to enter BIOS again and change the priority of boot devices so that the hard drive is the first attempted boot device. (This ensures a faster reboot when recycling the server.)



If you do not remove the installation CD before rebooting, it could hang up at the start of reboot. In this case eject the CD and restart the machine.

## Step 17: Check that the system is able to reboot to a normal state

It is good to ensure that the system is in a stable state and that it returns to normal operations on reboot without intervention— especially if there is no keyboard or other peripherals attached. Following a normal reboot, the screen should look like this:

```
Your identification has been saved in /etc/ssh/ssh_host_rsa_key.
Your public key has been saved in /etc/ssh/ssh_host_rsa_key.pub.
The key fingerprint is:
92:de:74:f8:78:8e:e0:c4:e9:af:66:65:87:2a:9e:1e root@portabox.local.com
creating ssh2 DSA host key
Generating public/private dsa key pair.
Your identification has been saved in /etc/ssh/ssh_host_dsa_key.
Your public key has been saved in /etc/ssh/ssh_host_dsa_key.pub.
The key fingerprint is:
df:20:fa:94:e3:16:7f:be:76:9d:6f:a7:37:06:02:9d root@portabox.local.com
.
ELF ldconfig path: /usr/lib /usr/lib/compat /usr/local/lib
a.out ldconfig path: /usr/lib/aout /usr/lib/compat/aout
Starting standard daemons: inetd cron sshd usbd.
Initial rc.i386 initialization:.
Configuring syscons: blanktime.
Additional ABL support:.
Local package initialization: radiusd mysqld radcheck.pl.
Additional TCP options:.

Thu Jul  7 03:06:10 PDT 2005

FreeBSD/i386 (portabox.local.com) (ttyv0)

login: █
```

Press **Ctrl + Alt +Del** if you need to reboot.

## Step 18: Prepare system for transportation (optional)

If you need to transport the system to another location (e.g. hosting center) or otherwise power down the system safely, proceed as follows:

- Wait until the system finishes booting
- Log in as root
- Type `shutdown -p now`
- Wait until either the system powers down on its own, or until the message “The operating system has halted” appears, and then power off the server